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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/762,327 | 01/23/2004 | IK-Soo Kim | 8733.742.20-US | 4950 |

7590 12/23/2004
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| EXAMINER |
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NGO, HUYEN LE

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| ART UNIT | PAPER NUMBER |
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2871

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/762,327

Applicant(s)

KIM ET AL.

Examiner

Julie-Huyen L. Ngo

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 20,21,23 and 25-31 is/are rejected.
- 7) ☒ Claim(s) 22 and 24 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/23/2004 & 5/03/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group I (claims 20-31) in the reply filed on October 7, 2004 is acknowledged.

Information Disclosure Statement

The information disclosure statement (IDS) filed January 23, 2004 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each Non-Patent Literature Documents that listed. Therefore, the IDS have been considered in part for those documents that are submitted and on the record.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 20-21, 23 and 25-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim (US 20020180901A1).

With respect to claim 20, Kim teaches (Figs. 8 and 13B) forming an array substrate for in-plane switching mode liquid crystal display device comprising:

- a substrate 71 having a plurality of pixel regions,
- a plurality of gate lines 75, a gate electrode 73, a plurality of common lines (capacitor common line 75) and a common electrode (where common lines overlaps with pixel electrodes) on the substrate,

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- a first insulating layer 77 over the substrate,
- a semiconductor layer 79 on the first insulating layer,
- a plurality of data lines 93, source and drain electrodes 83/85 and a pixel electrode 91 on the semiconductor layer;
- the common line and the pixel electrode being formed a first storage capacitor,
- a second insulating layer 79 over the substrate; and
- an auxiliary line (capacitor common line 87) on the second insulating layer 79 and being overlapped with the common line, the pixel electrode and the auxiliary line being formed a second storage capacitor.

Claims 21 and 23:

- the gate lines and data line inherently extending to a non-display area for providing the driving signals; thereby, the extending portions of gate lines and data lines consider as the dummy line in a non-display area. However, the gate lines are made of aluminum thereby the dummy line (extending portion of gate line) is inherently made of aluminum.

Claims 27 and 28:

- an insulating layer (gate insulating layer 77) between the common line and the pixel electrode to form a first auxiliary storage capacitor, wherein the insulating layer includes one of silicon nitride (SiN_x) and silicon oxide (SiO_2) (paragraph 56).

Claims 29-30:

- an insulating layer (upper insulating layer 89) between the pixel electrode and the auxiliary line to form a second auxiliary storage capacitor, wherein the insulating layer includes one of silicon nitride (SiN_x) and silicon oxide (SiO_2) (paragraph 60).

wherein

Claims 25-26:

- the gate line/common line and common electrode made of aluminum (paragraph 55).

Claim 31:

- the thin film transistor having a gate electrode 73, an active layer 79, a source electrode 83e and a drain electrode 85.

Allowable Subject Matter

Claims 22 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 22 and 24 are allowable since there is no prior art that teaches an array substrate for in-plane switching mode liquid crystal display device comprising:

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- an auxiliary line on the second insulating layer and being overlapped with the common line, the pixel electrode and the auxiliary line being formed a second storage capacitor.
- a dummy lines communicating the auxiliary line and locating in a non-display area of the substrate.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Chung (US 20020085134 A1) discloses a liquid crystal display device comprising at least two storage capacitors disposed between the gate line and the capacitor electrode making the same potential as the gate line are provided.

Lee (US 5920362 A) discloses a method of forming thin-film transistor liquid crystal display having a silicon active layer contacting a sidewall of a data line and a storage capacitor electrode.

Nishikawa et al. (US 5724107 A) discloses a liquid crystal display with transparent storage capacitors for holding electric charges.

Contact Information


Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Julie-Huyen L. Ngo whose telephone number is (571) 272-2295. The Examiner can normally be reached on T-Friday.

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If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Mr. Robert H. Kim can be reached at (571) 272-2293.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1562.

December 21, 2004



Julie-Huyen L. Ngo
Primary Examiner
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